

**REMARKS**

This is in response to the Office Action mailed on March 19, 2007.

Claims 1-25 are currently pending in this application, with claims 1, 3, 9, 13, 14 and 19 being independent. *No new matter has been added.*

Reexamination in light of the following remarks is respectfully requested.

**Claim objections**

Paragraph 2 of the Office Action indicates an objection to claim 14.

In response to this rejection, please hold this objection in abeyance at this time until the other art rejections have been overcome.

At that stage, an appropriate response may be addressed if still deemed necessary by the Examiner.

**Rejection under 35 U.S.C. §112, second paragraph**

Paragraph 4 of the Office Action indicates a rejection of claims 1-13 under 35 U.S.C. §112, second paragraph.

In response to this rejection, please hold this rejection in abeyance at this time until the other art rejections have been overcome.

At that stage, an appropriate response may be addressed if still deemed necessary by the Examiner.

### Rejections under 35 U.S.C. §102 and 35 U.S.C. §103

Paragraph 6 of the Office Action indicates a rejection of claims 1-7, 9, 10, and 13-16 under 35 U.S.C. §102 as allegedly being anticipated by U.S. Patent No. 6,211,509 to Inoue et al. (Inoue).

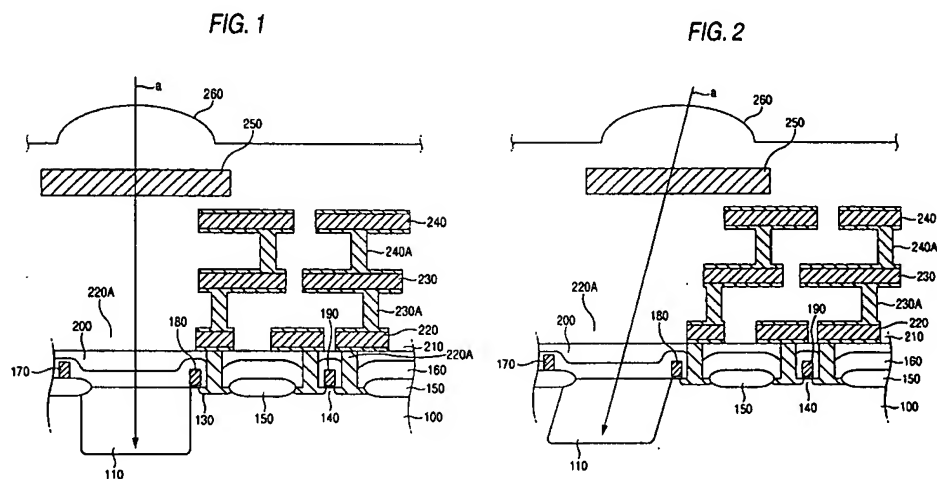
Paragraph 8 of the Office Action indicates a rejection of claims 8, 11, 12, 17, and 18 under 35 U.S.C. §103 as allegedly being unpatentable over Inoue in view of U.S. Patent Application No. 2005/0035376 to Yamada.

These rejections are traversed at least for the following reasons.

At least for the following reasons, if the allowance of the claim is not forthcoming at the very least and a new ground of rejection made, then a **new non-final Office Action** is respectfully requested.

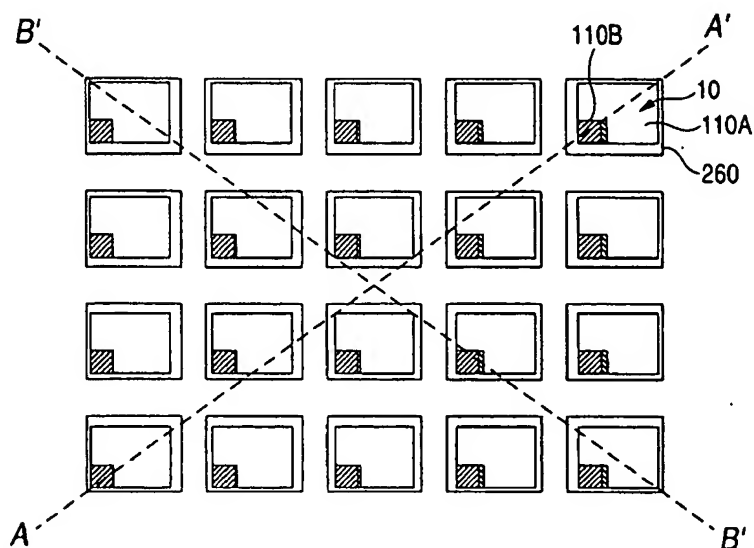
The following description is provided for illustrative purposes and is not intended to limit the scope of the invention.

Provided hereinbelow are Figures 1 and 2 of the specification as originally filed.



Additionally provided hereinbelow is Figure 3 of the specification as originally filed.

**FIG. 3**



**Claims 1-2** - Claim 2 is dependent upon claim 1. Claim 1 is drawn to a solid-state image pickup device characterized by comprising:

an imaging area including multiple two-dimensionally arranged pixels,

wherein the pixel has a collective lens and a photoelectric converting portion;

the photoelectric converting portion has a surface in an asymmetrical form;

the collective lens is positioned above the photoelectric converting portion and at a substantial symmetrical center making up for the surface asymmetry in a pixel in a center part of the imaging area;

the collective lens is placed at a position shifted more toward the center of the imaging area from a part on the symmetrical substantial center as a distance from the center of the imaging area to a pixel thereof increases; and

the collective lens has an amount of shift depending on the degree of asymmetry of the surface of the photoelectric converting portion in a pixel positioned at an equal distance from the center of the imaging area.

Inoue - Inoue arguably teaches the presence of a solid-state image sensor. Provided hereinbelow is Figure 1 of Inoue.

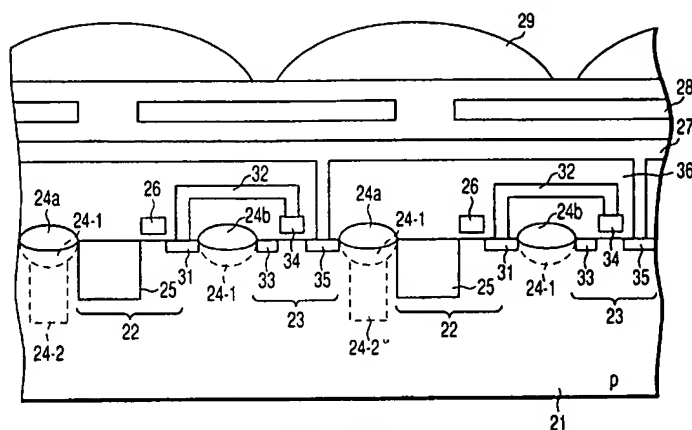


FIG. 1A

The Office Action appears to associate element 29 of Inoue as the *collective lens 29* and appears to associate element 22 of Inoue as the *photoelectric converting portion 22* (Office Action at page 5).

However, comparing the adjacent pixel units depicted within Figure 1A of Inoue, Figure 1A of Inoue *fails* to disclose, teach, or suggest that the collective lens 29 is placed at a position shifted more toward the center of the imaging area from a part on the symmetrical substantial center as a distance from the center of the imaging area to a pixel thereof increases.

Nevertheless, the Office Action refers to Figures 1A and 2A of Inoue to account for this feature (Office Action at page 5).

In response to this reliance only upon Figures 1A and 2A of Inoue, it is well established under U.S. patent practice and procedures that drawings do not define the precise proportions of the

elements and may not be relied on to show particular sizes *if the specification is completely silent* on the issue. *Hockerson-Halberstadt Inc. v. Avia Group International Inc.*, 222 F.3d 951, 956, 55 USPQ2d 1487, 1491 (Fed. Cir. 2000). See M.P.E.P. §2125 (proportions of features in a drawing are not evidence of actual proportions when drawings are not drawn to scale).

Moreover, arguments based on the measurement of a drawing are of little value absent any written description in the specification of the quantitative values allegedly shown within the drawings. *In re Wright*, 569 F.2d 1124, 1127, 193 USPQ 332, 335 (CCPA 1977).

In this regard, the Office Action fails to identify any written description in the specification of Inoue for the teaching that the alleged collective lens 29 of Inoue is placed at a position shifted more toward the center of the imaging area from a part on the symmetrical substantial center as a distance from the center of the imaging area to a pixel thereof increases.

- *Thus, Inoue fails to disclose, teach, or suggest that the collective lens is placed at a position shifted more toward the center of the imaging area from a part on the symmetrical substantial center as a distance from the center of the imaging area to a pixel thereof increases.*

In this regard, the Office Action fails to identify any written description in the specification of Inoue for the teaching that the alleged collective lens 29 of Inoue has an amount of shift depending on the degree of asymmetry of the surface of the alleged photoelectric converting portion 22 of Inoue in a pixel positioned at an equal distance from the center of the imaging area.

- *Thus, Inoue fails to disclose, teach, or suggest that the collective lens has an amount of shift depending on the degree of asymmetry of the surface of the photoelectric converting portion in a pixel positioned at an equal distance from the center of the imaging area.*

Yamada - Yamada arguably teaches the presence of a solid-state image sensor. Yamada arguably teaches the presence of a plurality of photoelectric conversion sections 309 (Yamada at paragraph [0061]).

Provided hereinbelow is Figure 1 of Yamada.

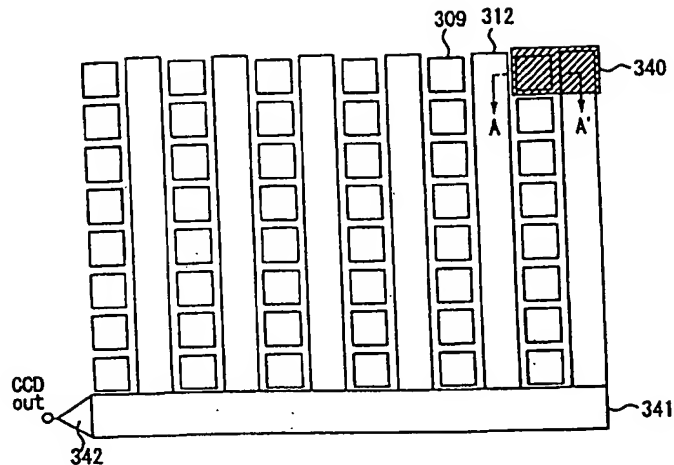


FIG. 1

The Office Action fails to identify any written description in the specification of Yamada for the teaching that an alleged collective lens of Yamada is placed at a position shifted more toward the center of the imaging area from a part on the symmetrical substantial center as a distance from the center of the imaging area to a pixel thereof increases.

- Thus, Yamada fails to disclose, teach, or suggest that the collective lens is placed at a position shifted more toward the center of the imaging area from a part on the symmetrical substantial center as a distance from the center of the imaging area to a pixel thereof increases.

The Office Action fails to identify any written description in the specification of Yamada for the teaching that the alleged collective lens of has an amount of shift depending on the degree of asymmetry of the surface of the alleged photoelectric converting portion 309 of Yamada in a pixel positioned at an equal distance from the center of the imaging area.

- Thus, Yamada fails to disclose, teach, or suggest that the collective lens has an amount of shift depending on the degree of asymmetry of the surface of the photoelectric

*converting portion in a pixel positioned at an equal distance from the center of the imaging area.*

**Claims 3-8** - Claims 4-8 are dependent upon claim 3. Claim 3 is drawn to a solid-state image pickup device characterized by comprising:

an imaging area including multiple two-dimensionally arranged pixels,

wherein each pixel has a collective lens and a photoelectric converting portion;

the collective lens is placed at a position shifted more toward the center of the imaging area as a distance from the center of the imaging area to a pixel thereof increases; and

an amount of the shift of the collective lens is defined based on the height from a surface of the photoelectric converting portion of the collective lens and the thickness in the direction of depth of the substrate of the photoelectric converting portion such that an amount of light incident within the photoelectric converting portion can increase.

**Inoue** - The Office Action ***fails*** to identify any written description in the specification of **Inoue** for the teaching that the alleged collective lens 29 of **Inoue** is placed at a position shifted more toward the center of the imaging area as a distance from the center of the imaging area to a pixel thereof increases.

- *Thus, Inoue **fails** to disclose, teach, or suggest that the collective lens is placed at a position shifted more toward the center of the imaging area as a distance from the center of the imaging area to a pixel thereof increases.*

The Office Action ***fails*** to identify any written description in the specification of **Inoue** for the teaching that an amount of the shift of the alleged collective lens 29 of **Inoue** is defined based on the height from a surface of the alleged photoelectric converting portion 22 of the alleged collective lens 29 and the thickness in the direction of depth of the substrate of the alleged

photoelectric converting portion 22 such that an amount of light incident within the alleged photoelectric converting portion 22 can increase.

- *Thus, Inoue fails to disclose, teach, or suggest that an amount of the shift of the collective lens is defined based on the height from a surface of the photoelectric converting portion of the collective lens and the thickness in the direction of depth of the substrate of the photoelectric converting portion such that an amount of light incident within the photoelectric converting portion can increase.*

Yamada - The Office Action fails to identify any written description in the specification of Inoue for the teaching that a collective lens of Yamada is placed at a position shifted more toward the center of the imaging area as a distance from the center of the imaging area to a pixel thereof increases.

- *Thus, Yamada fails to disclose, teach, or suggest that the collective lens is placed at a position shifted more toward the center of the imaging area as a distance from the center of the imaging area to a pixel thereof increases.*

The Office Action fails to identify any written description in the specification of Yamada for the teaching that an amount of the shift of a collective lens of Yamada is defined based on the height from a surface of the alleged photoelectric converting portion 309 of the collective lens and the thickness in the direction of depth of the substrate of the alleged photoelectric converting portion 22 such that an amount of light incident within the alleged photoelectric converting portion 309 can increase.

- *Thus, Yamada fails to disclose, teach, or suggest that an amount of the shift of the collective lens is defined based on the height from a surface of the photoelectric converting portion of the collective lens and the thickness in the direction of depth of the substrate of the photoelectric converting portion such that an amount of light incident within the photoelectric converting portion can increase.*



**Claims 9-12** - Claims 10-12 are dependent upon claim 9. Claim 9 is drawn to a solid-state image pickup device, characterized by comprising:

an imaging area including multiple two-dimensionally arranged pixels,

wherein each pixel has a photoelectric converting portion, and

a bottom of the photoelectric converting portion is placed at a position shifted from the center of the imaging area toward the outside with respect to the surface thereof in each of at least some pixels of the multiple pixels.

**Inoue** - The Office Action ***fails*** to identify any written description in the specification of Inoue for the teaching that a bottom of the alleged photoelectric converting portion 22 is placed at a position shifted from the center of the imaging area toward the outside with respect to the surface thereof in each of at least some pixels of the multiple pixels.

*Thus, Inoue **fails** to disclose, teach, or suggest that a bottom of the photoelectric converting portion is placed at a position shifted from the center of the imaging area toward the outside with respect to the surface thereof in each of at least some pixels of the multiple pixels.*

**Yamada** - The Office Action ***fails*** to identify any written description in the specification of Inoue for the teaching that a bottom of the photoelectric converting portion 309 is placed at a position shifted from the center of the imaging area toward the outside with respect to the surface thereof in each of at least some pixels of the multiple pixels.

- *Thus, Yamada **fails** to disclose, teach, or suggest that a bottom of the photoelectric converting portion is placed at a position shifted from the center of the imaging area toward the outside with respect to the surface thereof in each of at least some pixels of the multiple pixels.*

**Claim 13** - Claim 13 is drawn to an electronic apparatus having a solid-state image pickup device, the apparatus characterized in that:

the solid-state image pickup device has:

an imaging area including multiple two-dimensionally arranged pixels;

the pixel has a collective lens and a photoelectric converting portion;

the collective lens is placed at a position shifted more toward the center of the imaging area as a distance from the center of the imaging area to a pixel thereof increases;

an amount of the shift of the collective lens is defined based on the height from a surface of the photoelectric converting portion of the collective lens and the thickness in the direction of depth of the substrate of the photoelectric converting portion; and

a bottom of the photoelectric converting portion is shifted from the center of the imaging area toward the outside with respect to the surface thereof.

**Inoue** - The Office Action **fails** to identify any written description in the specification of Inoue for the teaching that an amount of the shift of the alleged collective lens 29 of Inoue is defined based on the height from a surface of the alleged photoelectric converting portion 22 of the alleged collective lens 29 and the thickness in the direction of depth of the substrate of the alleged photoelectric converting portion 22.

- *Thus, Inoue **fails** to disclose, teach, or suggest that an amount of the shift of the collective lens is defined based on the height from a surface of the photoelectric converting portion of the collective lens and the thickness in the direction of depth of the substrate of the photoelectric converting portion.*

The Office Action **fails** to identify any written description in the specification of Inoue for the teaching that a bottom of the alleged photoelectric converting portion 22 is placed at a

position shifted from the center of the imaging area toward the outside with respect to the surface thereof in each of at least some pixels of the multiple pixels.

*Thus, Inoue fails to disclose, teach, or suggest that a bottom of the photoelectric converting portion is placed at a position shifted from the center of the imaging area toward the outside with respect to the surface thereof in each of at least some pixels of the multiple pixels.*

**Yamada** - The Office Action fails to identify any written description in the specification of Yamada for the teaching that an amount of the shift of a collective lens of Yamada is defined based on the height from a surface of the alleged photoelectric converting portion 309 of the collective lens and the thickness in the direction of depth of the substrate of the alleged photoelectric converting portion 22.

- *Thus, Yamada fails to disclose, teach, or suggest that an amount of the shift of the collective lens is defined based on the height from a surface of the photoelectric converting portion of the collective lens and the thickness in the direction of depth of the substrate of the photoelectric converting portion..*

The Office Action fails to identify any written description in the specification of Inoue for the teaching that a bottom of the photoelectric converting portion 309 is placed at a position shifted from the center of the imaging area toward the outside with respect to the surface thereof in each of at least some pixels of the multiple pixels.

- *Thus, Yamada fails to disclose, teach, or suggest that a bottom of the photoelectric converting portion is placed at a position shifted from the center of the imaging area toward the outside with respect to the surface thereof in each of at least some pixels of the multiple pixels.*

**Claims 14-18** - Claims 15-18 are dependent upon claim 14. Claim 14 is drawn to a method of manufacturing a solid-state image pickup device, characterized by comprising:

a step of forming a photoelectric converting portion and collective lens in each pixel of an imaging area,

wherein the collective lens is placed at a position shifted more toward the center part of the imaging area as a distance from the center of the imaging area to a pixel thereof increases; and

an amount of the shift of the collective lens is defined based on the height from a surface of the photoelectric converting portion of the collective lens and the thickness in the direction of depth of the substrate of the photoelectric converting portion such that an amount of light incident within the photoelectric converting portion can increase.

Inoue - The Office Action fails to identify any written description in the specification of Inoue for the teaching that the alleged collective lens 29 of Inoue is placed at a position shifted more toward the center of the imaging area as a distance from the center of the imaging area to a pixel thereof increases.

- Thus, Inoue fails to disclose, teach, or suggest that the collective lens is placed at a position shifted more toward the center of the imaging area as a distance from the center of the imaging area to a pixel thereof increases.

The Office Action fails to identify any written description in the specification of Inoue for the teaching that an amount of the shift of the alleged collective lens 29 of Inoue is defined based on the height from a surface of the alleged photoelectric converting portion 22 of the alleged collective lens 29 and the thickness in the direction of depth of the substrate of the alleged photoelectric converting portion 22 such that an amount of light incident within the alleged photoelectric converting portion 22 can increase.

- Thus, Inoue fails to disclose, teach, or suggest that an amount of the shift of the collective lens is defined based on the height from a surface of the photoelectric converting portion of the collective lens and the thickness in the direction of depth of the

*substrate of the photoelectric converting portion such that an amount of light incident within the photoelectric converting portion can increase.*

**Yamada** - The Office Action **fails** to identify any written description in the specification of **Inoue** for the teaching that a collective lens of **Yamada** is placed at a position shifted more toward the center of the imaging area as a distance from the center of the imaging area to a pixel thereof increases.

- *Thus, **Yamada** **fails** to disclose, teach, or suggest that the collective lens is placed at a position shifted more toward the center of the imaging area as a distance from the center of the imaging area to a pixel thereof increases.*

The Office Action **fails** to identify any written description in the specification of **Yamada** for the teaching that an amount of the shift of a collective lens of **Yamada** is defined based on the height from a surface of the alleged photoelectric converting portion 309 of the collective lens and the thickness in the direction of depth of the substrate of the alleged photoelectric converting portion 22 such that an amount of light incident within the alleged photoelectric converting portion 309 can increase.

- *Thus, **Yamada** **fails** to disclose, teach, or suggest that an amount of the shift of the collective lens is defined based on the height from a surface of the photoelectric converting portion of the collective lens and the thickness in the direction of depth of the substrate of the photoelectric converting portion such that an amount of light incident within the photoelectric converting portion can increase.*

### **Newly added claims**

Claims 19-25 - Claims 20-25 are dependent upon claim 19. Claim 19 is drawn to a solid-state image pickup device comprising:

pixels arranged in an imaging area, each of the pixels having a collective lens and a photoelectric converting portion,

wherein a configuration for one of the pixels differs from another of the pixels.

Inoue and Yamada, either individually or as a whole, fail to disclose, teach, or suggest a solid-state image pickup device wherein a configuration for one of the pixels differs from another of the pixels.

Allowance of the claims is respectfully requested.

### **Conclusion**

For the foregoing reasons, all the claims now pending in the present application are allowable, and the present application is in condition for allowance.

Accordingly, favorable reexamination and reconsideration of the application in light of the remarks is courteously solicited.

### **Extensions of time**

Please treat any concurrent or future reply, requiring a petition for an extension of time under 37 C.F.R. §1.136, as incorporating a petition for extension of time for the appropriate length of time.

**Fees**

If any fee is required or any overpayment made, the Commissioner is hereby authorized to charge the fee or credit the overpayment to Deposit Account # 18-0013.

If the Examiner has any comments or suggestions that could place this application in even better form, the Examiner is requested to telephone Brian K. Dutton, Reg. No. 47,255, at 202-955-8753.

Dated: June 19, 2007

Respectfully submitted,

By

Ronald P. Kananen

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